OPALCO

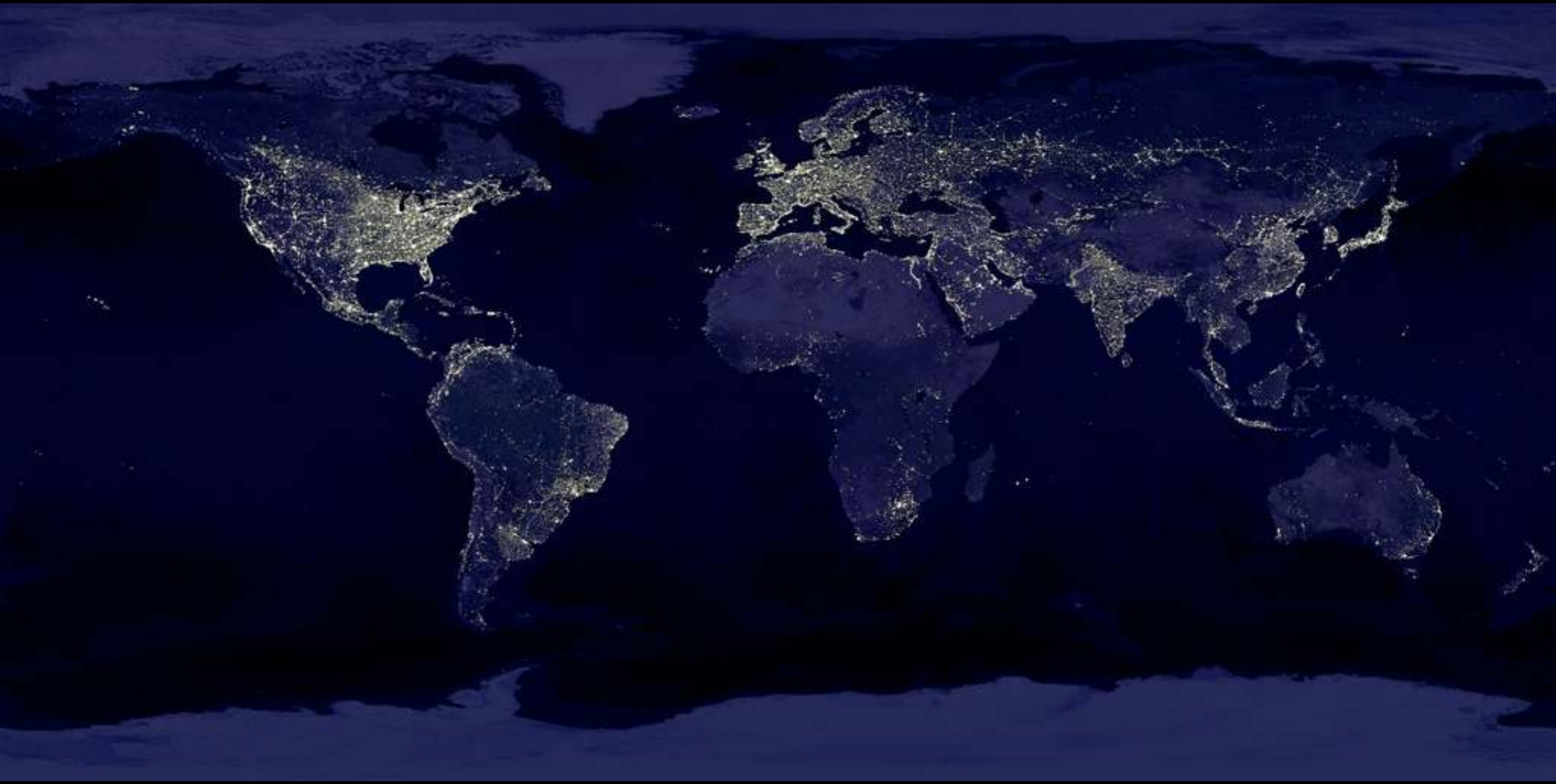## in the 21st Century

The Seven Cooperative Principles

Voluntary and Open Membership

~

Democratic Member Control

~

Members' Economic Participation

~

Autonomy and Independence

~

Education, Training, and Information

~

Cooperation Among Cooperatives

~

Concern for Community

OPALCO
Linemen

OPALCO
in the 21st Century

In the presence of economic, climate and energy policy uncertainty, OPALCO is adapting to change, and building opportunity.

We work cooperatively with our members to support sustainable climate-friendly development of our community and deliver safe, efficient, and reliable energy and communications services through our robust communications network.

We are strategic; managing precious resources wisely, growing our infrastructure carefully. In a world of rising energy costs, we empower our members to live and work more energy efficiently. To reduce risk, we diversify our energy portfolio beyond hydro to include energy partnerships, local energy generation and storage, and other sources, as they become viable.

We give our community access to our comprehensive countywide communications backbone to meet present and future demand for reliable communications and internet needs.

We maintain a long-range plan that is strategic, proactive and financially sound.

Beyond energy,
beyond tomorrow,
in the heart of community...

OPALCO

Lopez Undergrounding Operation

OPALCO
Board of Directors

OPALCO Board

Vince Dauciunas

Dauciunas holds Bachelors and Masters Degrees in Electrical Engineering from the University of Notre Dame and UC Berkeley. He worked at NASA's Jet Propulsion Laboratory, Hewlett Packard and Agilent Technologies in R&D, general management, and business development.

Glenna Hall

Glenna retired as a judge of the King County Superior Court in 2008, and currently serves as Judge Pro Tempore for the San Juan Superior and District Courts. She earned her J.D. at the University of Washington School of Law, her M.A. in Political Science from Northwestern University and her B.A. in Political Science with Highest Honors from Douglass College, Rutgers University.
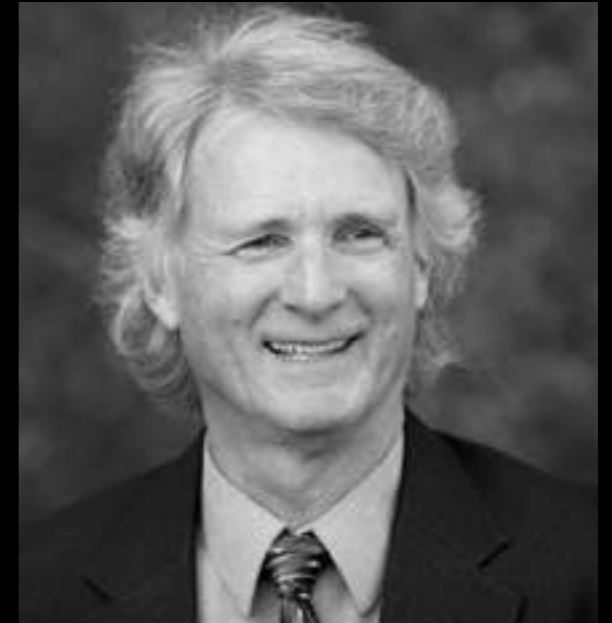
OPALCO Board

Chris Thomerson

Thomerson has a degree in Electrical Engineering from the University of Manchester in England. He trained as a field engineer in London in field operations and generation technology. Thomerson is also a past president of the Washington Rural Electric Cooperative.

Winnie Adams

Adams graduated from Stanford School of Education with a Masters degree. Winnie is retired from a career in teaching including service as an environmental educator at the Yosemite Institute. In 1977, she moved to Waldron where she built a small house powered by solar energy. In 1990, Winnie and her husband Bob Gamble moved to Orcas and began living part time on the grid.

OPALCO Board

District 3: Lopez, Decatur, Center and Charles Islands

Bob Myhr

Bob served on the San Juan County Council, 2005-2010, and was executive director of the San Juan Preservation Trust from 1985 to 2002. Bob held an executive position in the forest products industry and taught at the University of Washington. He holds a bachelor's degree in economics from Amherst College and PhD from Columbia University. An OPALCO member since 1967. Bob was first elected to the board in 1986.

Jim Lett

Jim retired as Regional Vice President of a national property/casualty insurance company headquartered in Bellevue, Washington. A graduate of Oklahoma State University, Jim served in the U.S. Marine Corps Reserve and was active with many insurance industry societies and boards.

OPALCO Board

District 4: Shaw, Bell, Canoe and Crane Islands

Dr. Jerry Whitfield

Dr. Whitfield and his wife Carol live on Shaw Island and have been OPALCO members since 1999. As a Doctorate Aerospace Engineer, Whitfield has served with such companies as Rolls Royce Aero Engines, General Electric Company and The Boeing Company. An entrepreneur in the renewable energy field since the mid-1980s, Whitfield invented the wood pellet stove, built and led a successful manufacturing company and helped pioneer the wood pellet industry across North America. Lately, Whitfield invented a unique café coffee roaster, Sonofresco; he and his wife run the business in Burlington, WA. Whitfield is also developing product ideas to simultaneously generate carbon negative energy and biochar from surplus biomass materials. Dr. Whitfield was appointed by the Board in March, 2014 to fill a board vacancy.

OPALCO Board Responsibilities

Key Mandates

Safety

Fiscal responsibility

Member service and satisfaction

Control

Mission

Values

ByLaws

Policies

Strategic

Directives

Approval

Budget

Capital Investments

Tariffs

Load Forecast

Long-range Plan

Construction Work Plan

Monitor, Oversight

Operations & Maintenance audit – RUS

Capital projects audit – RUS

Financial & Control audits - Moss Adams

Legal compliance - AtterWynne

Key Ratio Trend Analyses

Cost of Service studies

Member Satisfaction Surveys

General Manager reports

Broadband Milestones
November 21, 2013 Board Meeting

Motion made by Glenna Hall, seconded by Jim Lett

"Our Island communities are suffering economic damage and safety issues caused directly by inadequate phone and internet infrastructure.

Therefore, OPALCO shall accelerate expansion of our local member-owned robust, reliable high-speed data infrastructure to provide internet, phone, and emergency communications services to our members.

Deployment will be supported and funded by OPALCO assets, including equity and rates."

After a lengthy and thorough discussion, the motion carried unanimously.

OPALCO Senior Management

OPALCO Senior Management

Randy J. Cornelius, *General Manager*

Randy joined OPALCO in August 2002. For seven years previously, he was the Electric Utility Director of the City of Sitka Electric Department. Randy has more than 30 years experience in the electric utility business, starting as lineman.

He has a degree in Electrical Engineering from Oregon State University.

Randy is currently an executive board member for the Northwest Requirement Utilities (NRU), a board member of Northwest Public Power Administration (NWPPA) and is a member of Washington Rural Electric Cooperative Association (WRECA), the National Rural Electric Cooperative Association (NRECA) and Northwest River Partners.

Randy has testified before the State Legislature and the U.S. Congress on electric utility issues.

OPALCO Senior Management

Foster Hildreth, *Assistant General Manager*

Foster has particular expertise in governmental agency and board relations, financial team management, financial reporting and tracking, budgeting, scheduling and risk management.

Foster's skill at bringing projects in on-time and on-budget made him an invaluable member of executive teams with the City of Pasadena, Robert Mayer Corporation and Disney Development Company.

Hildreth has earned an excellent reputation for his business leadership style and is well respected in the federal co-op world. He is an active member of the Washington Rural Electric Cooperative Association, the Northwest Public Power Association, the federal Rural Utilities Service-USDA, National Information Systems Cooperative and the Cooperative Finance Corporation. Hildreth earned his Bachelor of Science in Finance and Real Estate and a Masters in Business Administration in Business Finance at the University of Southern California.

I have been in the utility audit business 35 years, watching OPALCO grow. In the early years, OPALCO was well meaning and had good attitude, but with problems.

With the current management team, the transformation has been remarkable. OPALCO's records are meticulous, complete, correct, available – the methodologies impeccable. The staff are competent, knowledgable, professional, with a commendable "can do" attitude and a refreshing desire to learn and improve.

If I could, I would take OPALCO with me as a model to demonstrate to other utilities how it should be done – a perfect example of the whole gamut of running a modern utility.

Jimmy Dellavedova
Rural Utility Service Auditor

OPALCO Operations and Engineering

Employment / Workplace

"OPALCO employs the best of the best in the utility industry to operate our member-owned cooperative efficiently - and provides a fair workplace, pay and benefits."

Meet OPALCO's New
Manager of Information Services

John Graminski

John Graminski comes to us from Pacific Gas & Electric Company in Northern California with more than 20 years experience in the electric utility industry.

John has spent much of his career working with electric cooperatives to develop innovative solutions for information and communication technology initiatives. His expertise is in IT management, managing real time energy management systems, designing and administering large scale data communications networks, developing multi-layered designs for comprehensive systems security, and managing teams of highly successful technology professionals.

He holds an MBA in Technology Management from the University of Phoenix and is completing his Doctor of Management degree in Organizational Leadership. He and his wife Peggi have been visiting the islands for years and look forward to putting down roots.

Communication with Members

- Board packets online monthly

- Email newsletter – 900 subscribers and growing

- Board meetings are open to all

- We respond to member inquiries quickly and openly

- Operations are subject to comprehensive audits
  - Financial, plant, legal, all by independent sources

"We are committed to keeping our members informed."

Some of OPALCO Friday Harbor Team

Member Services

"We are dedicated to serving our members in person, on the phone, and online, and provide them with the tools to save energy, time and money."

Some of OPALCO Eastsound Team

Service to Community

"Co-ops work for the sustainable development of their communities."

- PAL Committee

- MORE Committee

- Nourdine Jensen Cooperative Youth Scholarship Program & Youth Rally

- School Visits: Safety, How Electricity Works, Energy Efficiency and Conservation, Renewables

- Education Grants

- Policy 28 Grants to accelerate energy efficiency and community solar through the San Juan Islands Conservation District

Energy Fairs

Saturday, May 31 - Lopez Island
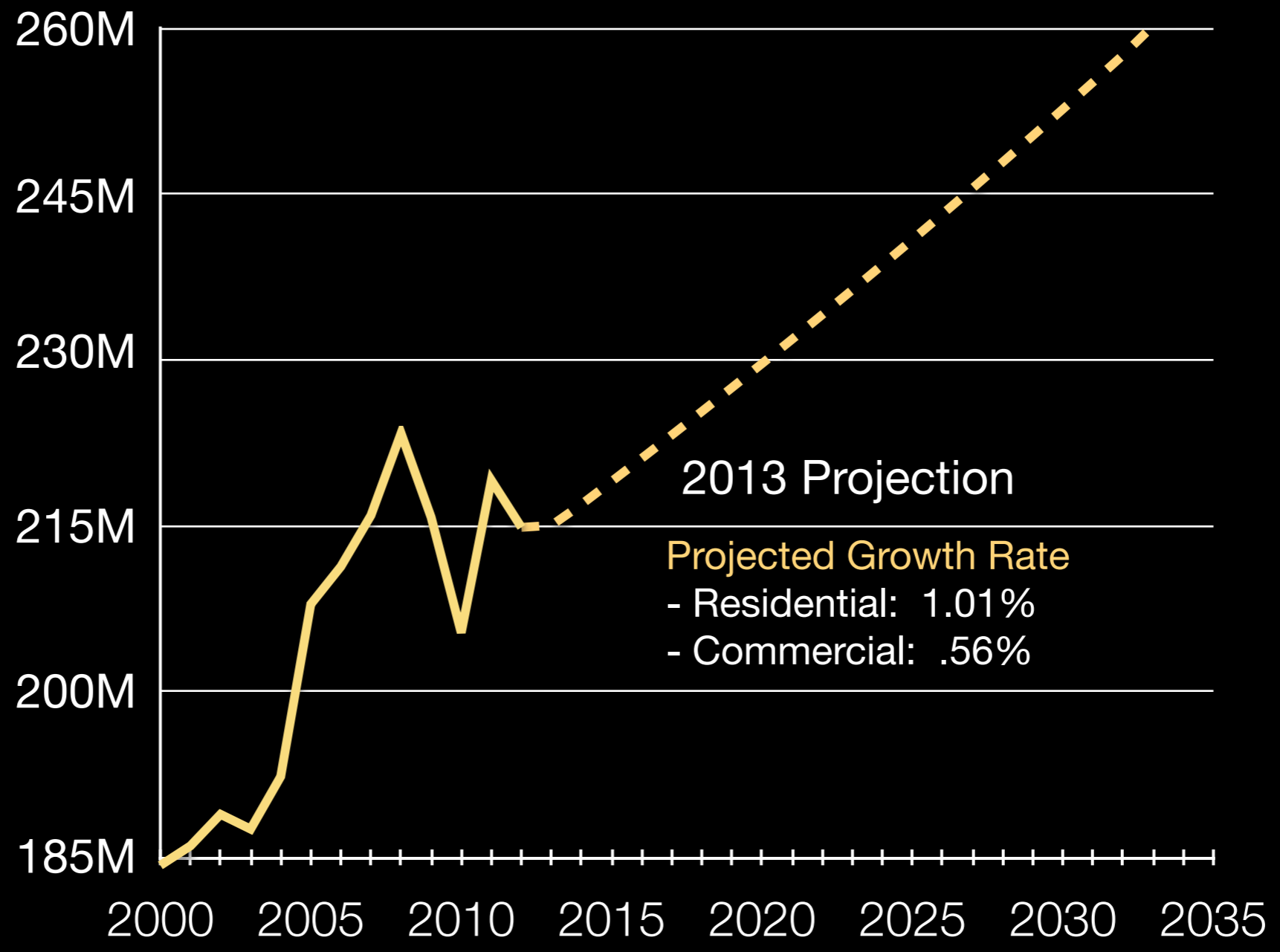10am to 3pm @ Lopez Center for Community and the Arts

Saturday, June 7 - Orcas Island
10am to 3pm @ Eastsound Village Green

Energy

OPALCO Total Energy Requirements (kWh)

2013 Projection

Projected Growth Rate
- Residential: 1.01%
- Commercial: .56%

source: *OPALCO Electric Load Forecast, 2013*

Board Directive #2

OPALCO will maintain a longterm evolving strategic power supply resource plan to provide safe, adequate, reliable, advantageously priced power including appropriate mitigation of source risk, economic, climate and energy policy uncertainty.

- Maintain BPA as our primary longterm power supplier.

- Investigate and form relationships with alternate suppliers of power.

- Implement energy efficiency and conservation programs as a cost effective power resource. These include member projects, BPA programs, and OPALCO infrastructure improvements.

- Encourage local generation installations consistent with our OPALCO grid operations.

OPALCO Total Energy Requirements
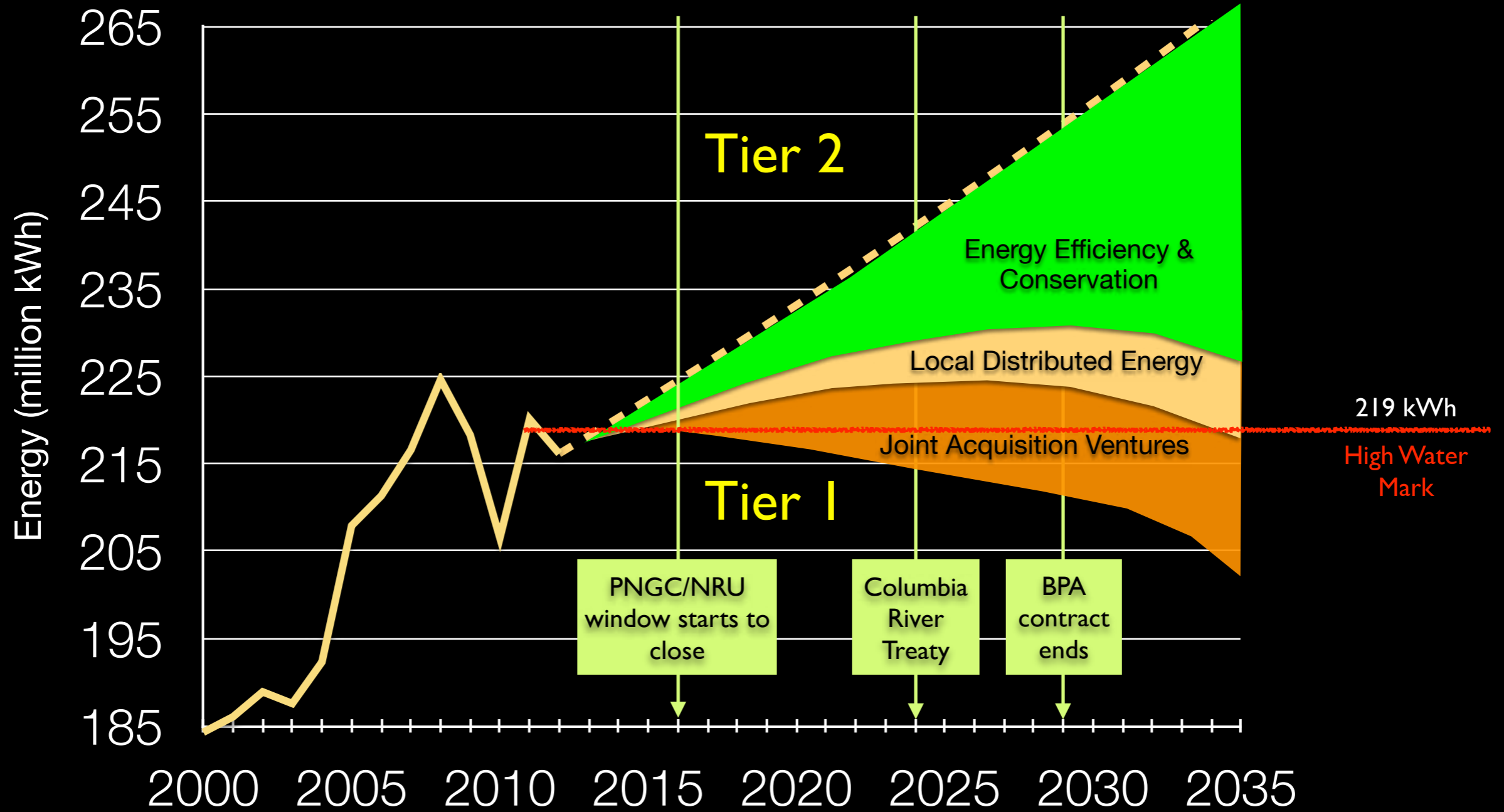
Contributions to Retail Electricity Rate

Operations
Maintenance
Infrastructure
6.82¢ per kWh

3.2¢ per kWh

Cost of
Electricity
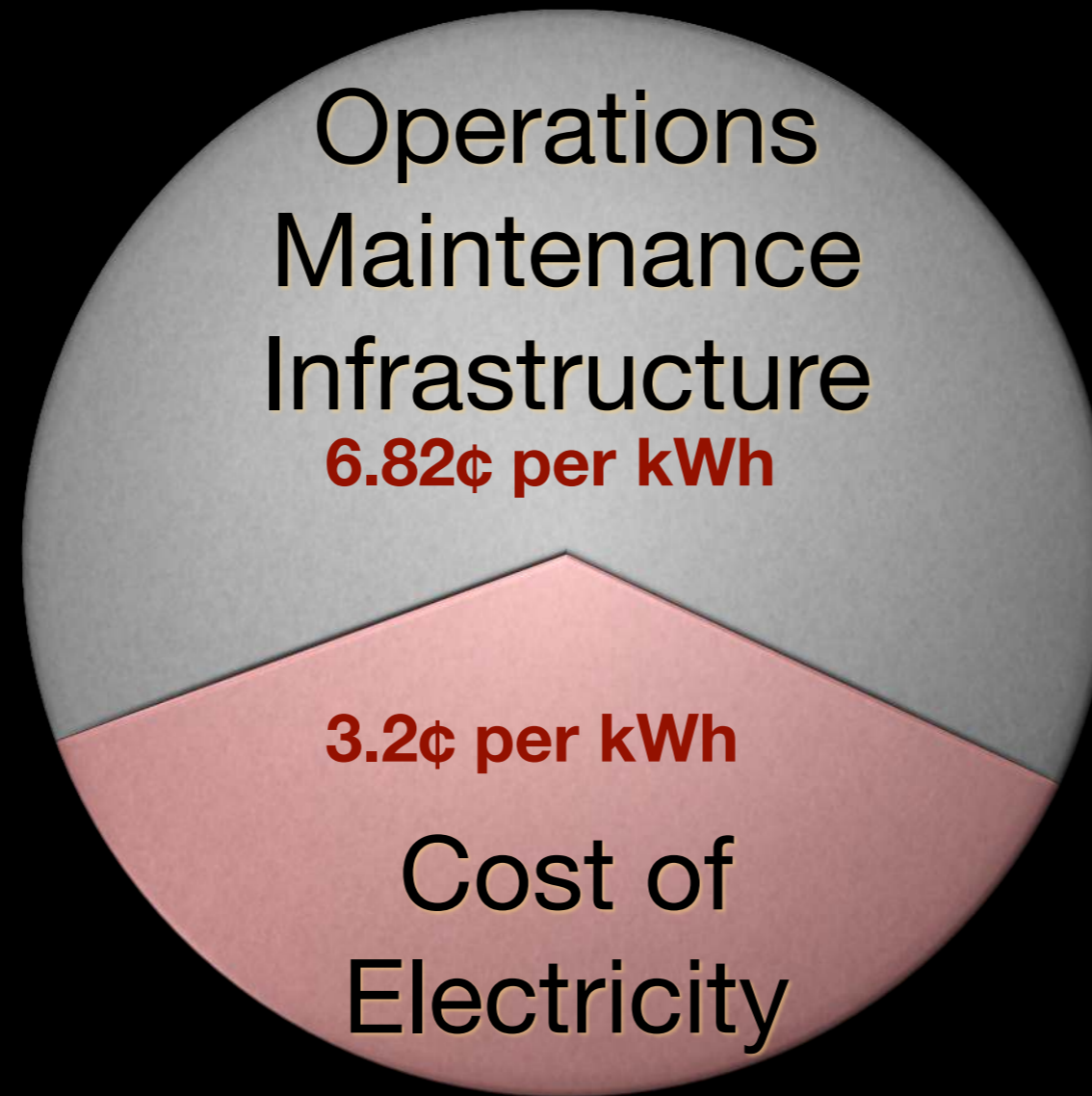
*"Most of the retail cost of electricity comes
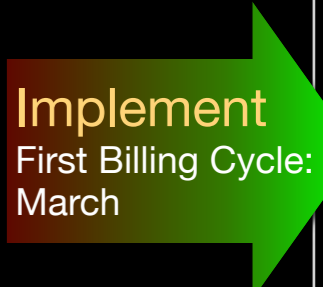from delivering it, not generating it."*

Lopez
Pole
Replacement

Electric Rates

"Everyone pays their fair share of the cost of service."

- Cost of Service study

- Encourage culture of energy efficiency and conservation to lower kWh usage and cost, while recovering facility costs

- Implement rate structure to meet strategic goals

Expected Rate Design Timetable

2014				2015
Q1	Q2	Q3	Q4	Q1

April Board Review
- Review BPA Rate Structure
- Introduce Rate Objectives

June Board Review
- Review final COS study
- Member comment

July Board Review
- Approve Rate Objectives
- Start Rate Design

August Board Review
- Review Rate Structure
- Review test results
- Review Rate Design
  - Establish rollout plan
    - Method
    - Duration

June Board Work Retreat
- Review draft COS study
- Refine Rate Objectives

Budget
- 2015-2017 Budget Confirmation

Implement
First Billing Cycle: March

Testing
- Apply Cost of Service
- Confirm objectives are met

Cost of Service Study
Contract => Data Input => Analysis

OPALCO Grid Control Backbone

- In operation since 2001

- 75 miles of a high-speed data communications backbone

- Networking substations

- Automatic meter reading

- SCADA grid monitoring

- Remote operation of field devices

$3.45 million on our balance sheet today

Why did we make that $3.45 million investment?

"If you want to get the most out of the grid, you need a first-class communications network."

- Save lives

- Increase reliability

- Reduce cost

- Conserve energy

- Prepare us for future
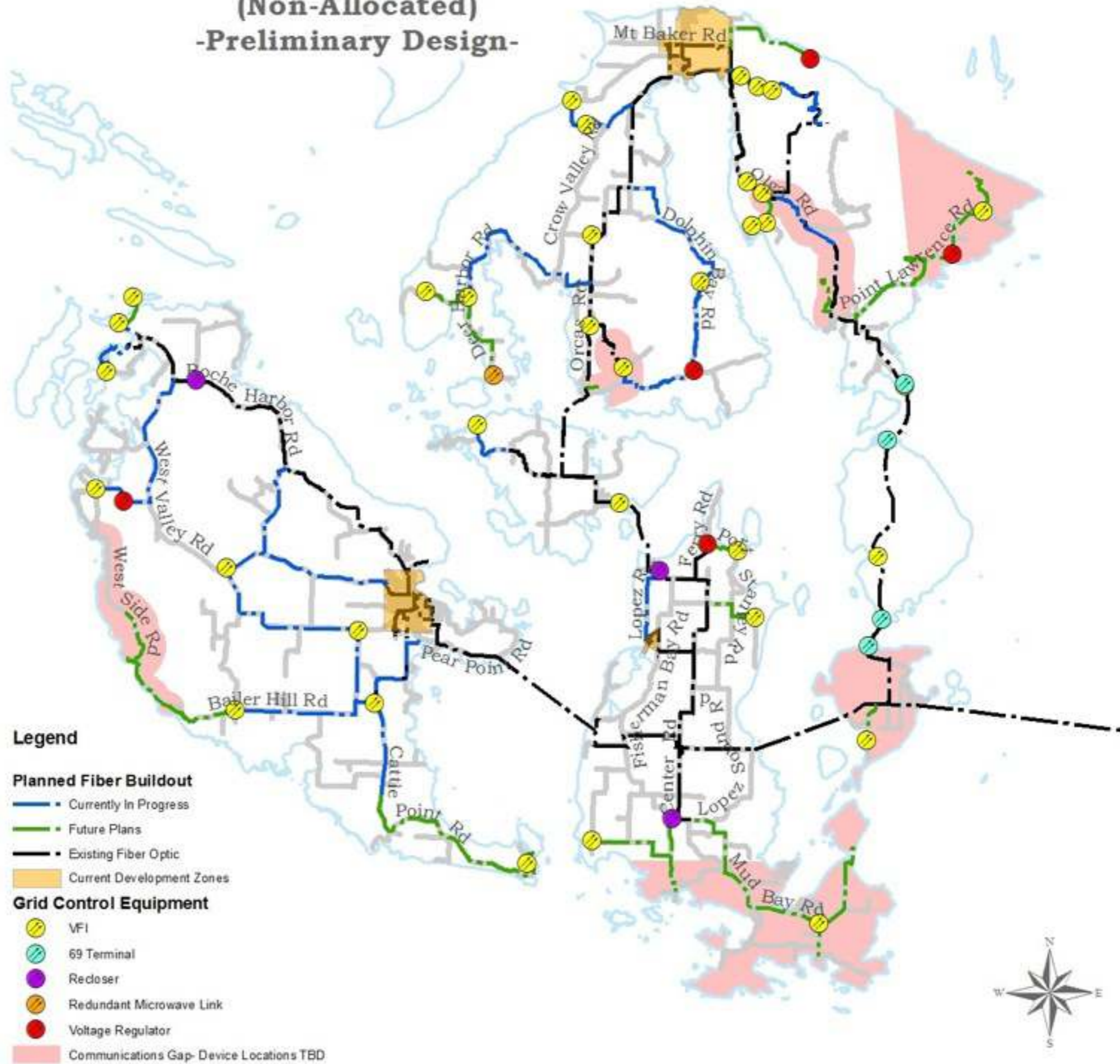
- *And it pays for itself*

Grid Control Expansion

"Fully utilize cost effective proven technologies which support our energy management and members services on a co-operative wide basis."

- Design future-proof backbone expansion to improve grid data communications

- Fill coverage gaps in communication network and plan for integration of first responder public safety communications system

- Continually improve and maintain the system using real time data to meet evolving needs

- We estimate the grid control backbone (field infrastructure to enhance distribution automation system) expansion will cost $7.5 million over next 4 years

Grid Control and Communication Backbone
(Non-Allocated)
-Preliminary Design-

All Islands

Legend

Planned Fiber Buildout
- Currently In Progress
- Future Plans
- Existing Fiber Optic
- Current Development Zones

Grid Control Equipment
- VFI
- 69 Terminal
- Recloser
- Redundant Microwave Link
- Voltage Regulator
- Communications Gap- Device Locations TBD

Kai Burleson

OPALCO Linemen Apprenticeship Program

Distribution Automation

- Increased use of digital information and controls technology to improve reliability, security, and efficiency of the electric grid.

- Dynamic optimization of grid operations and resources, with full cyber-security.

- Deployment of distributed resources and generation, including renewable resources

- Development of demand response, demand-side resources, and energy-efficiency resources

- Optimization of appliances and consumer devices

- Integration of state of the art appliances and consumer devices.

- Deployment and integration of advanced electricity storage and peak-shaving technologies

- Timely information and control options to consumers

- Interoperability of appliances and equipment connected to the grid

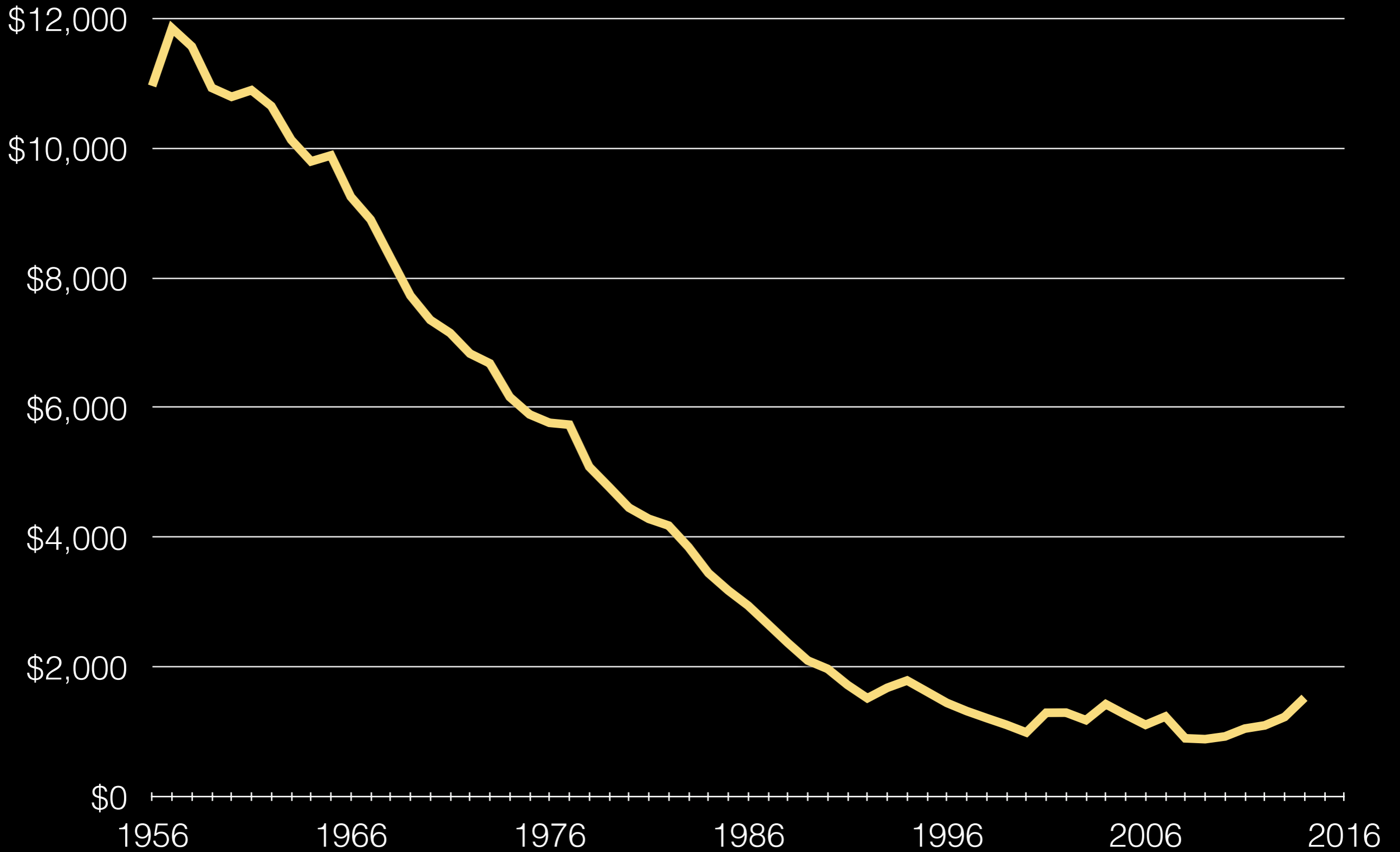# OPALCO Lineman at Crescent Beach

Finance

Co-op Finances

"OPALCO consistently ranks in the very top of our industry in rigorous audits and independent reviews."

Co-op Finances

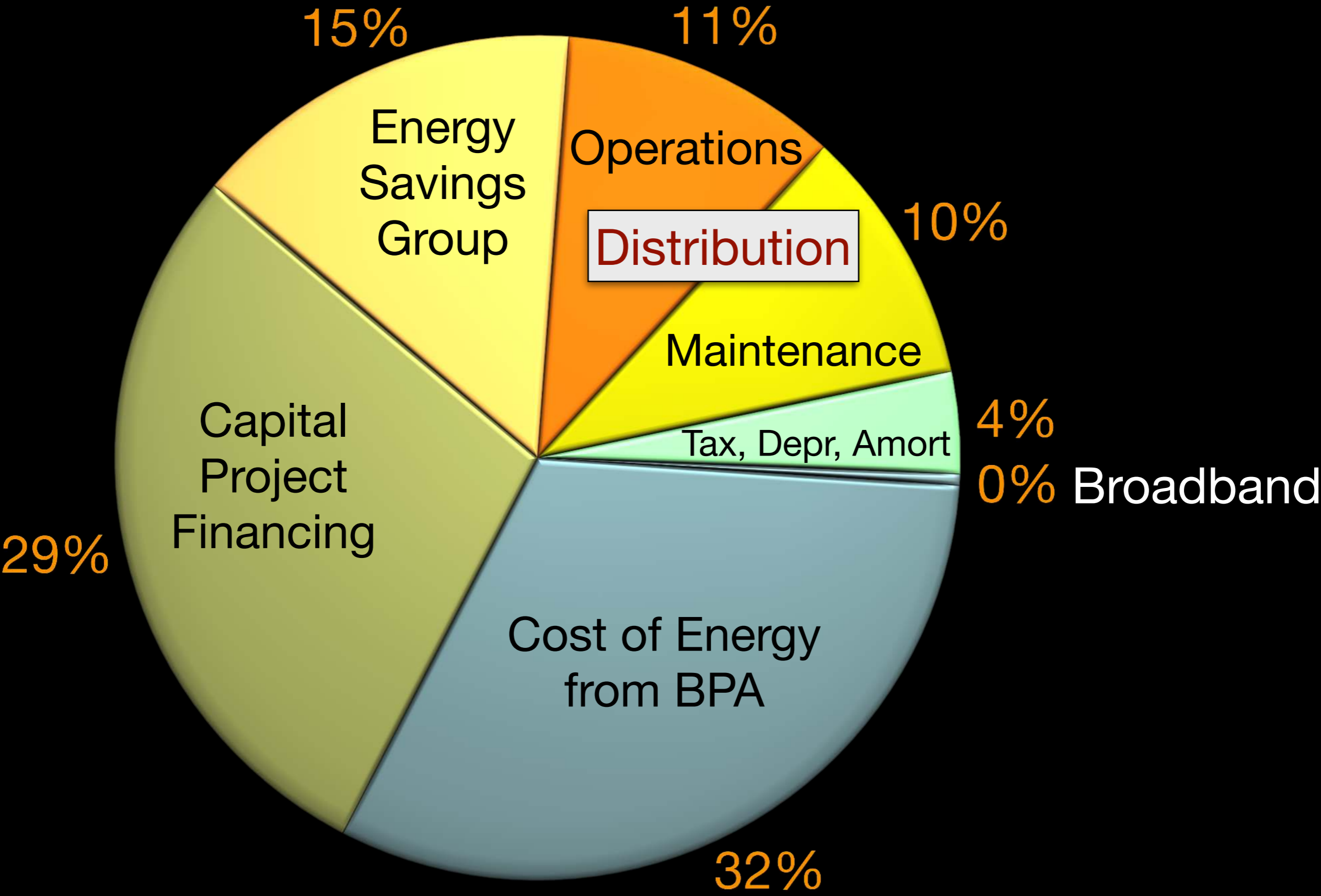*"The board sets strict financial parameters, and requires in-depth audit of results."*

- OPALCO's financial health, accounting systems and controls receive top marks on rigorous federal and independent audits

- Proactive long range and capital project planning

- Comprehensive annual budgeting process, with lookahead

- Regular and rigorous federal audits of Operations and Maintenance and Capital Projects

- Annual independent Moss Adams audit of finance (rates, billing, records, work orders, purchasing and inventory, coding, income/expense) and controls (policies, budgeting, bylaw compliance, security)

OPALCO Debt Per Meter Connection

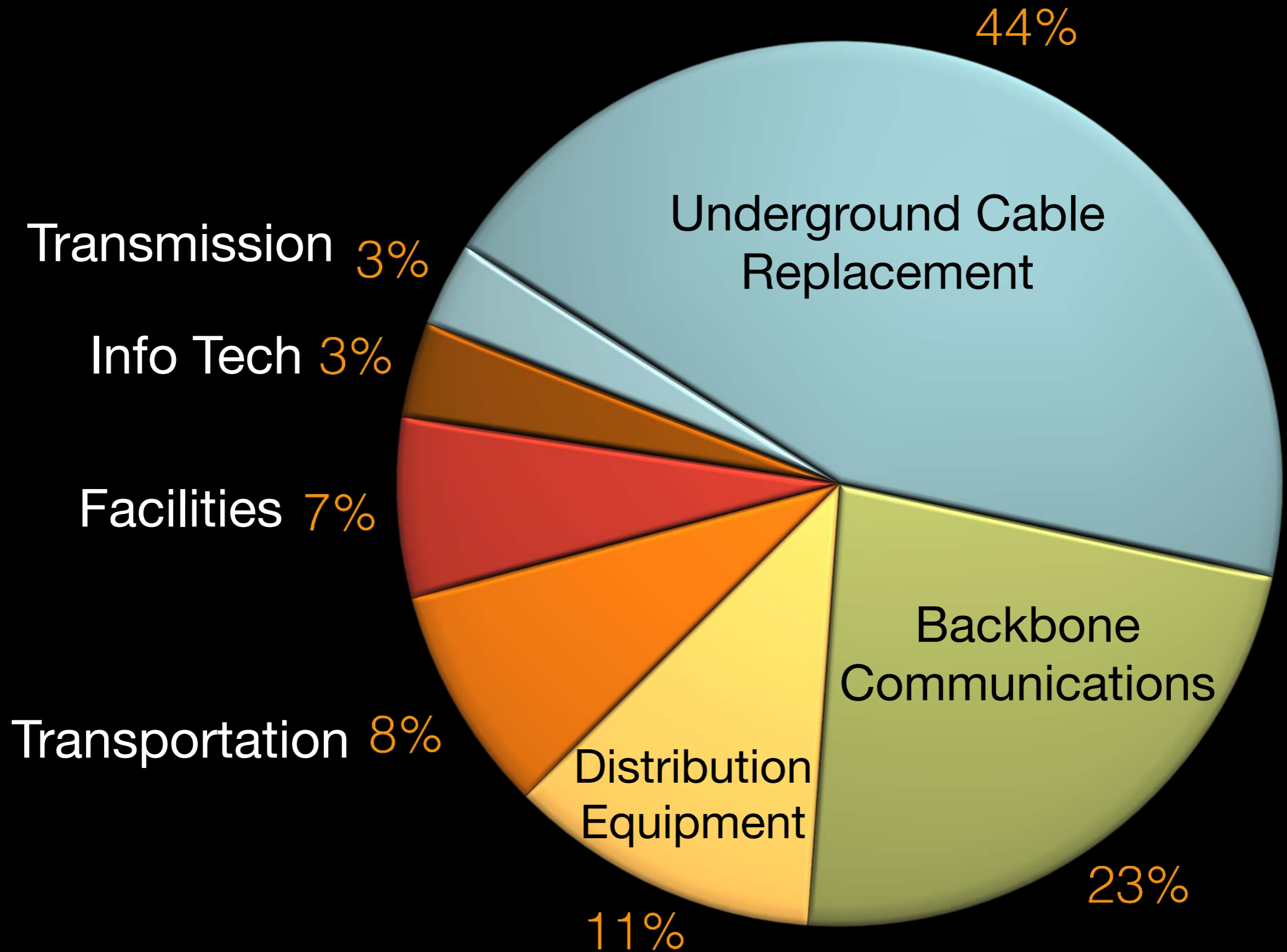(inflation adjusted)

2014 Contributions to 6% Rate Increase

- 15% — Energy Savings Group
- 11% — Operations
- Distribution
- 10% — Maintenance
- 4% — Tax, Depr, Amort
- 0% Broadband
- 32% — Cost of Energy from BPA
- 29% — Capital Project Financing

2014 Capital Projects - $8.5 Million

44%

Underground Cable Replacement

Transmission 3%

Info Tech 3%

Facilities 7%

Transportation 8%

Distribution Equipment

Backbone Communications

11%

23%

Major Capital Projects

$6,000,000 .... Transmission
(submarine cable)

$5,000,000 ....

$4,000,000 ....

$3,000,000 ....

$2,000,000 .... Backbone Communications
Undergrounding

$1,000,000 .... Distribution Equipment

$0

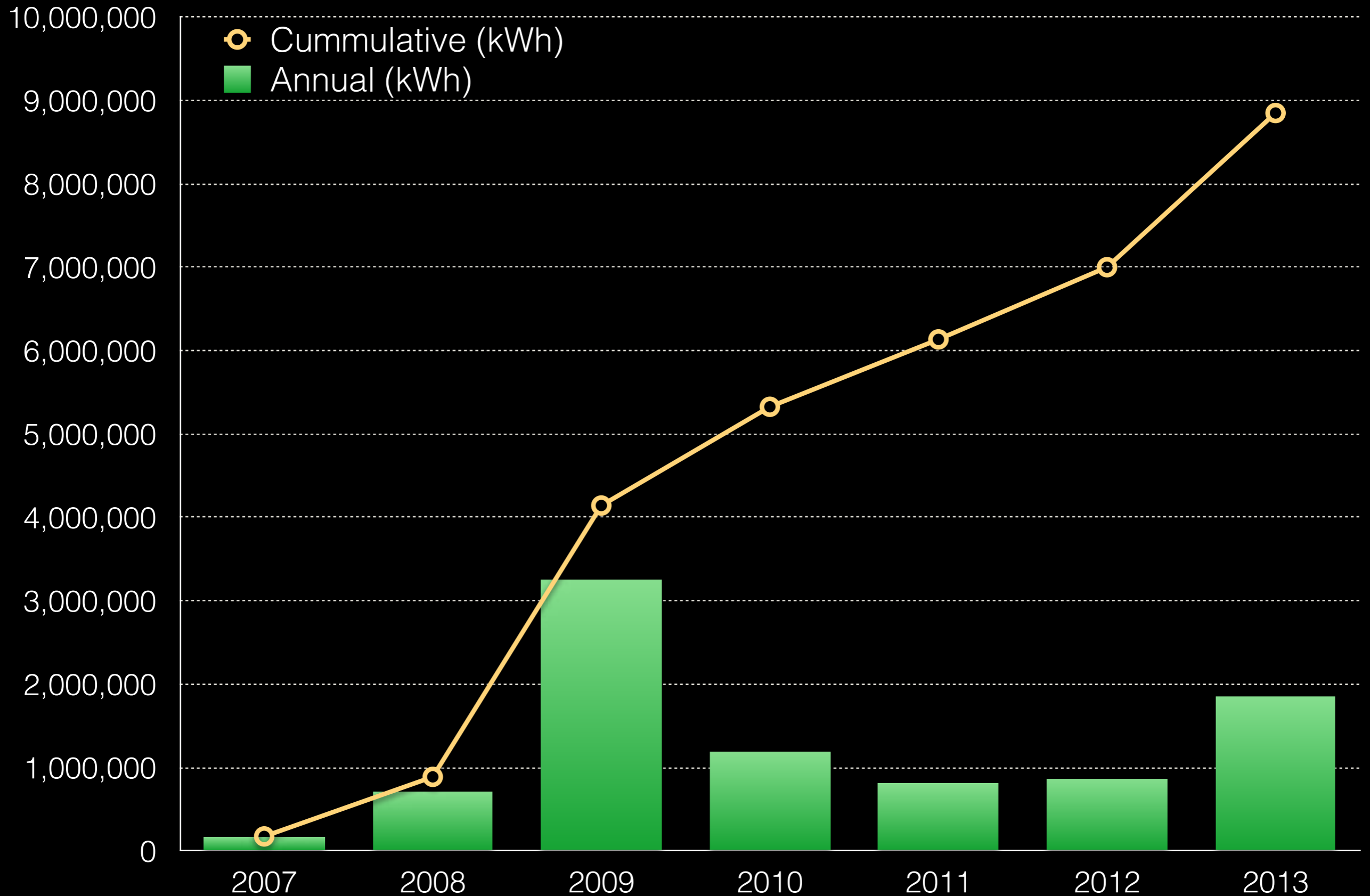2013   2014   2015   2016
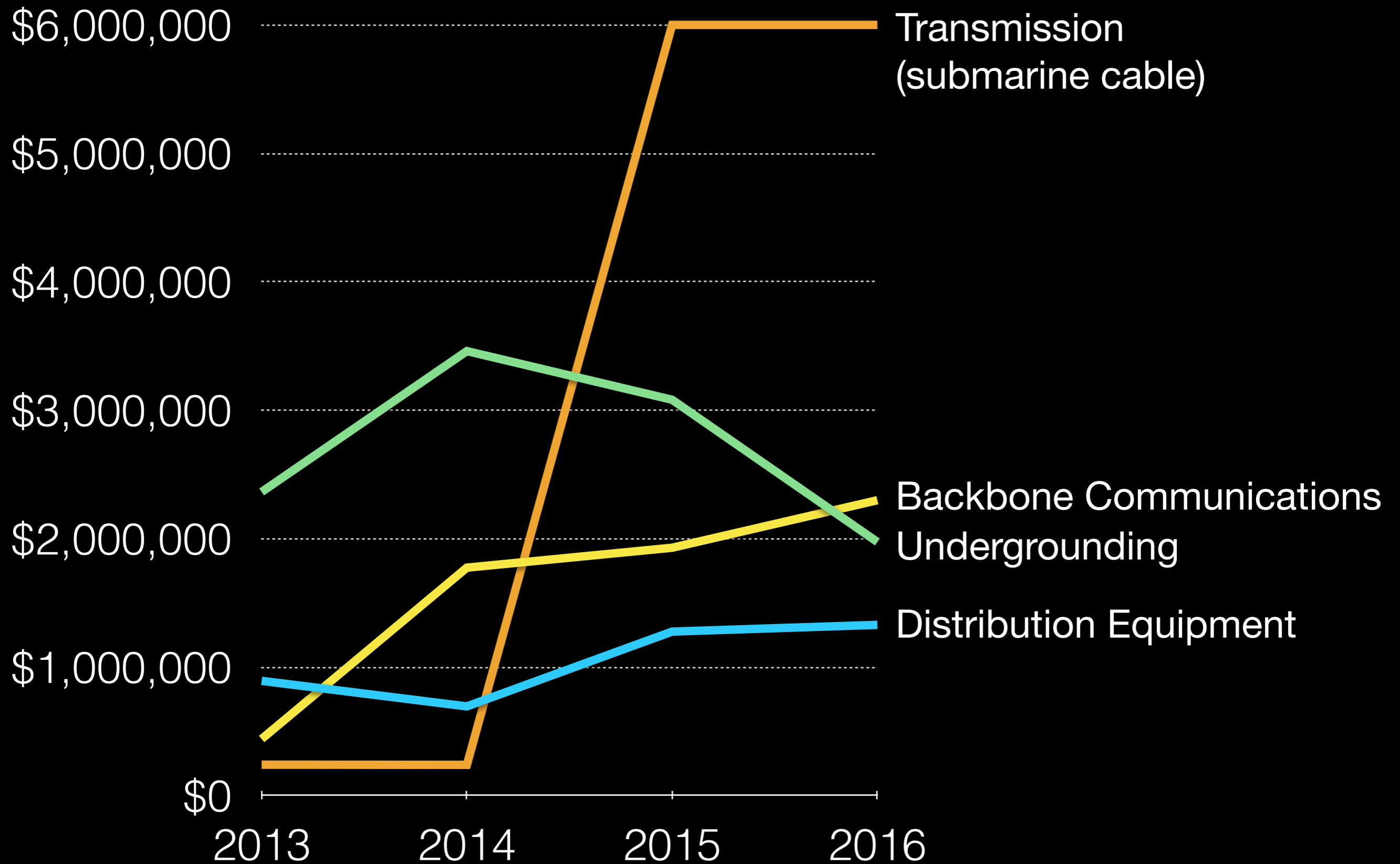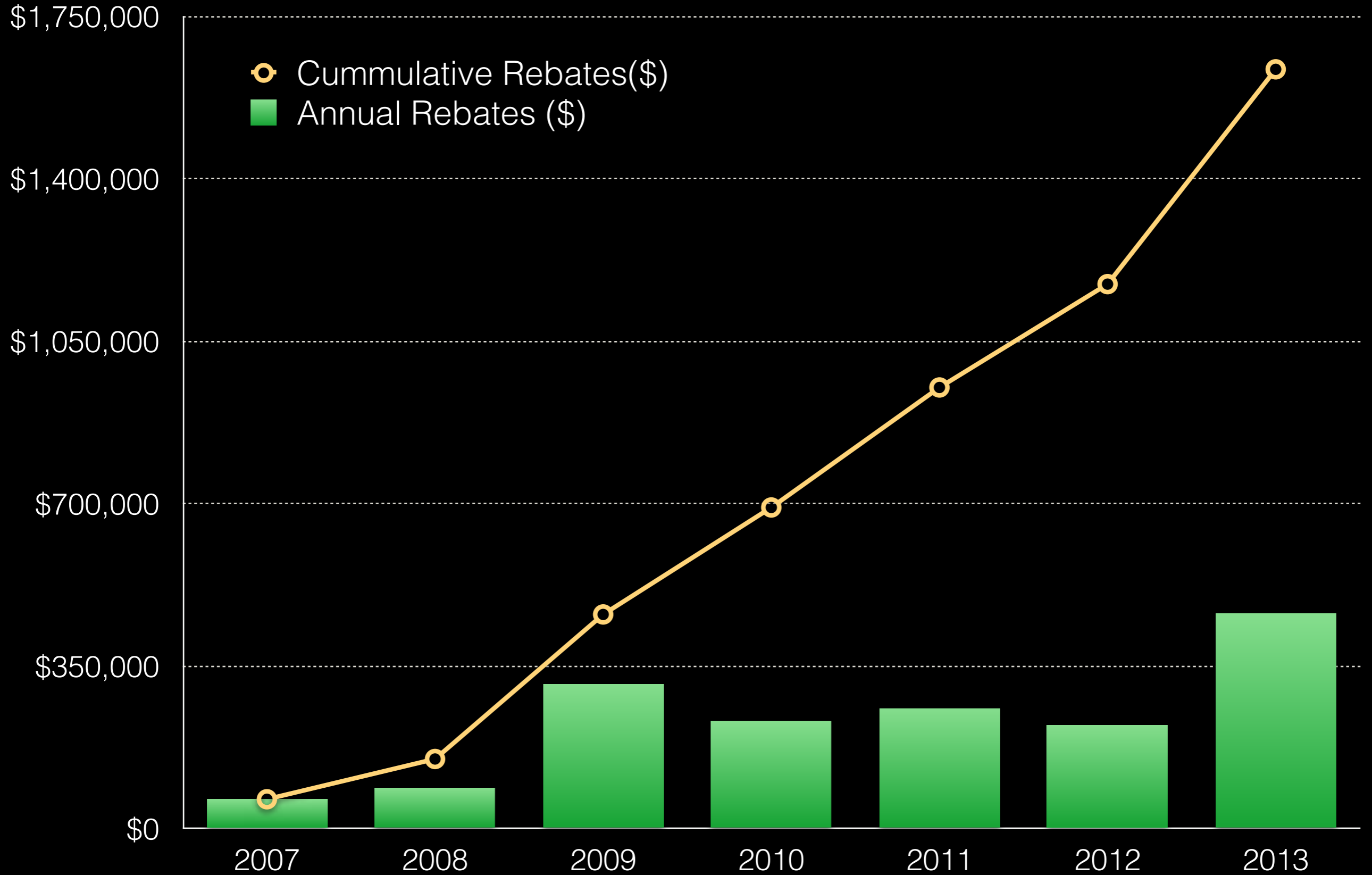
(projects over $1 million)

Energy Savings

Energy Saving Milestones for 2013

- Almost 2.7 million kWH saved during BPA 2 year rate period starting October 2011, ending September 2013

- OPALCO energy efficiency rebates were over $600,000 in same period

- OPALCO board approves Policy 28, to accelerate energy efficiency and community solar projects through collaboration with local nonprofits

- $150,000 matching grant awarded by OPALCO to San Juan Islands Conservation District, serving as umbrella organization, linking local nonprofits, including Island Stewards, Island Energy Coalition, Opportunity council, Solar Gardens and others

OPALCO Residential and Commercial Energy Savings

OPALCO Residential and Commercial Rebates

○ Cummulative Rebates($)
■ Annual Rebates ($)

Local Distributed Power on OPALCO Grid

Energy Generated (kWh)

- ○ pre-MORE (kWh)
- ○ MORE (kWh)

Total Incentives Paid:
$175,354

Total Incentives Paid:
$69,707

320,000
280,000
240,000
200,000
160,000
120,000
80,000
40,000
0

2006 2007 2008 2009 2010 2011 2012 2013
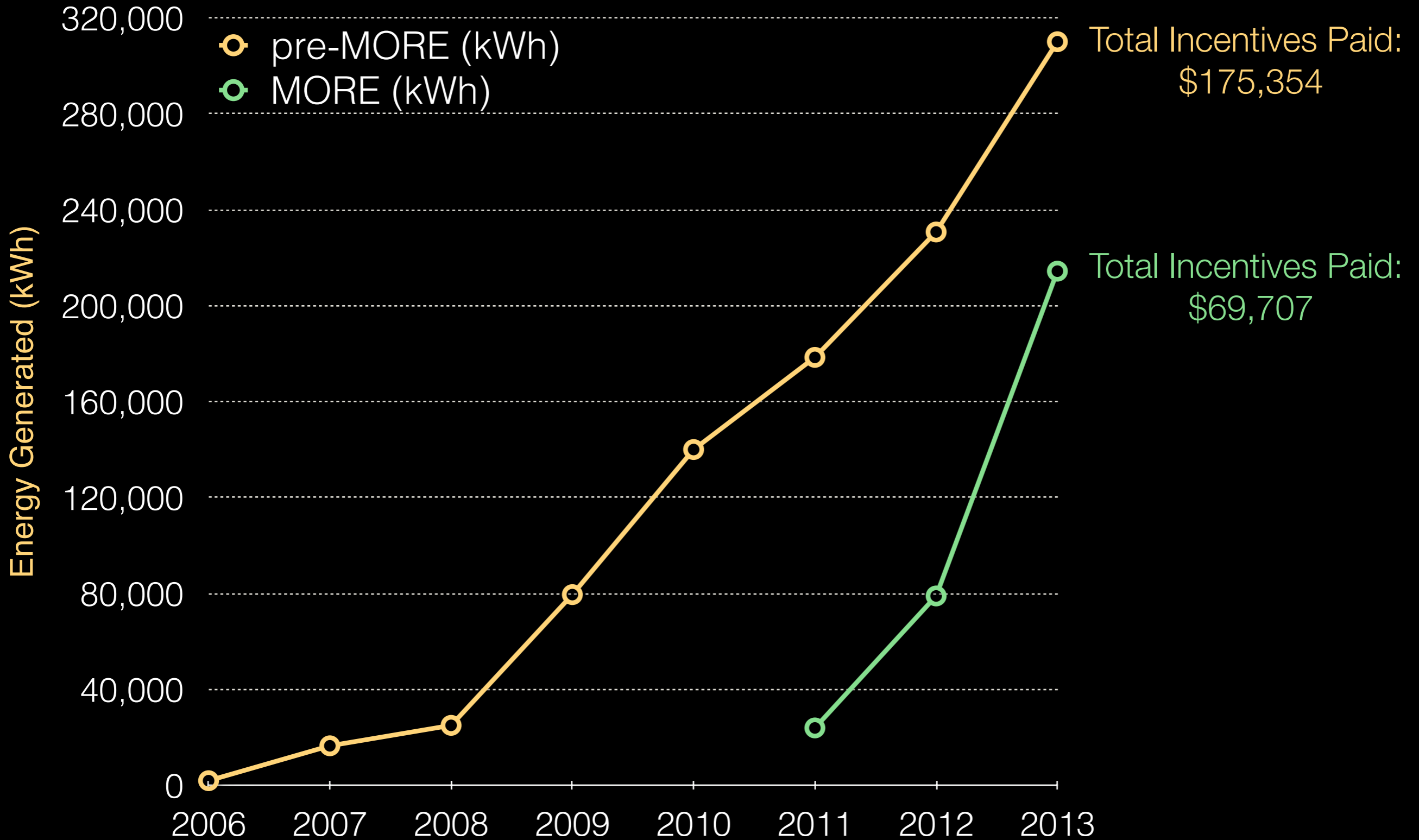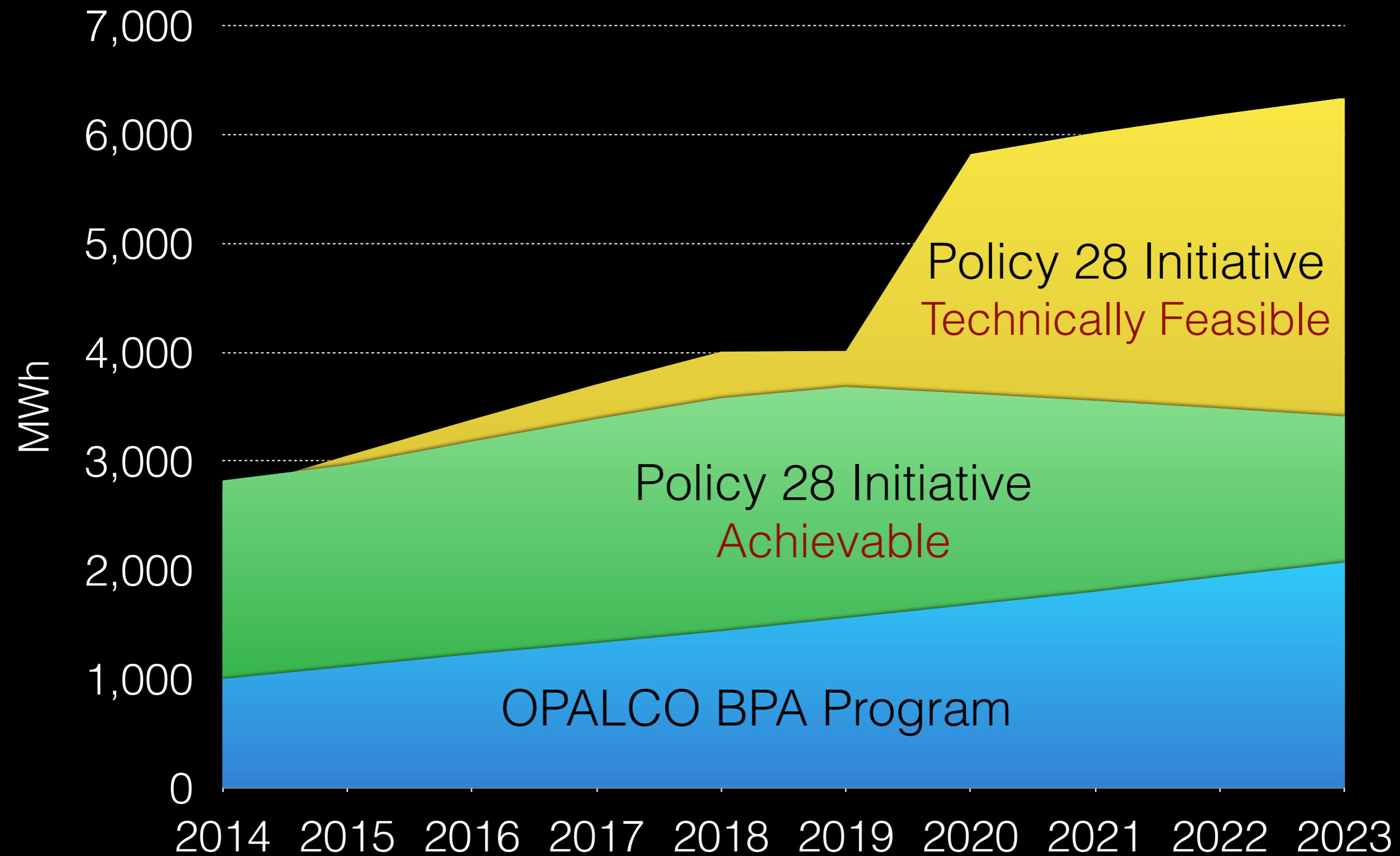
Home Energy Efficiency Potential

In the OPALCO service area, for the past few years, demand for energy has been growing at about 1% per year. The potential for energy efficiency is so strong that we could reverse that trend, and have ZERO LOAD GROWTH as soon as 2016.

Here are the top five things that can help homes and businesses use energy wisely, save money, and live more comfortably. Call OPALCO to find out the potential savings in your home and business.

Heat Pumps 41%

Energy Star Appliances 7%

Heat Pump Water Heaters 7%

LED Lighting 8%

Insulation 36%

Energy Efficiency Potential

MWh

Policy 28 Initiative
Technically Feasible

Policy 28 Initiative
Achievable

OPALCO BPA Program

7,000
6,000
5,000
4,000
3,000
2,000
1,000
0

2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
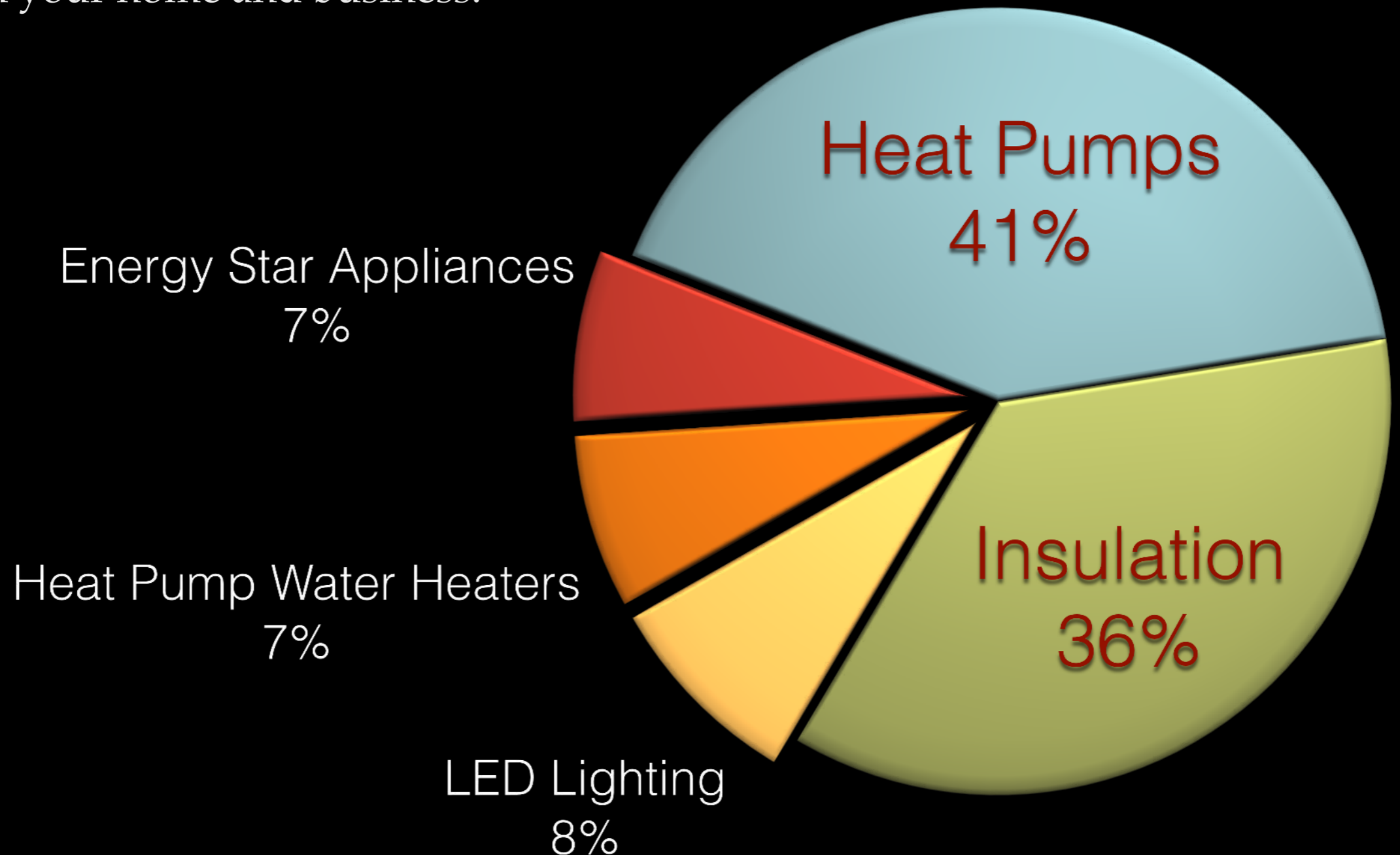
Broadband

OPALCO

in the 21st Century

"The future is not a result of choices among alternative paths offered by the present, but a place that is created – created first in mind and will, created next in activity.

The future is not some place we are going to, but one we are creating.

The paths to it are not found but made, and the activity of making them changes both the maker and the destination."

John Schaar

Member Internet Access To Date

In 2004, Island Network was formed to provide members access to our communications backbone

28 members, 54 locations connected to the backbone

Resellers

- 3 Internet Service Providers
- NoaNet - Schools, Libraries, County Courthouse, etc.,…
- CenturyLink

End-users

- 22 businesses
- 6 medical facilities
- 5 government agencies
- 3 fire districts
- 2 pharmacies

Island Network has $500k in Plant

"<u>Only Island Network members</u> pay monthly subscription fees for operations, at Cost of Service."

<u>All</u> Members Benefit

- Education

- Libraries

- Government

- Public Safety

- Businesses

- Medical facilities

- Backup for CenturyLink outages

Reliable, high speed community network that is an essential ingredient of a sustainable community

Reseller and End-user Members

Cost of Service

Not for Profit

Co-op Way

Members First

Expanding Member Access
Taking it to the next level

"In 2013 the Board voted unanimously to expand OPALCO's communication infrastructure for the electric system, and open it up to the membership."

- Hire Manager of Information Services

- Design Grid Control Backbone infrastructure, with expansion capability

- Member connections are not to include backbone allocations

- Purchase 700 MHz licensed spectrum as a backbone infrastructure component

- Connect members (including CenturyLink and local ISPs) for actual cost of connection, and supply services at cost of service, just like the electric side

- Continue Island Network as an ISP, and work with other ISPs for the benefit of the members

Expansion Timetable
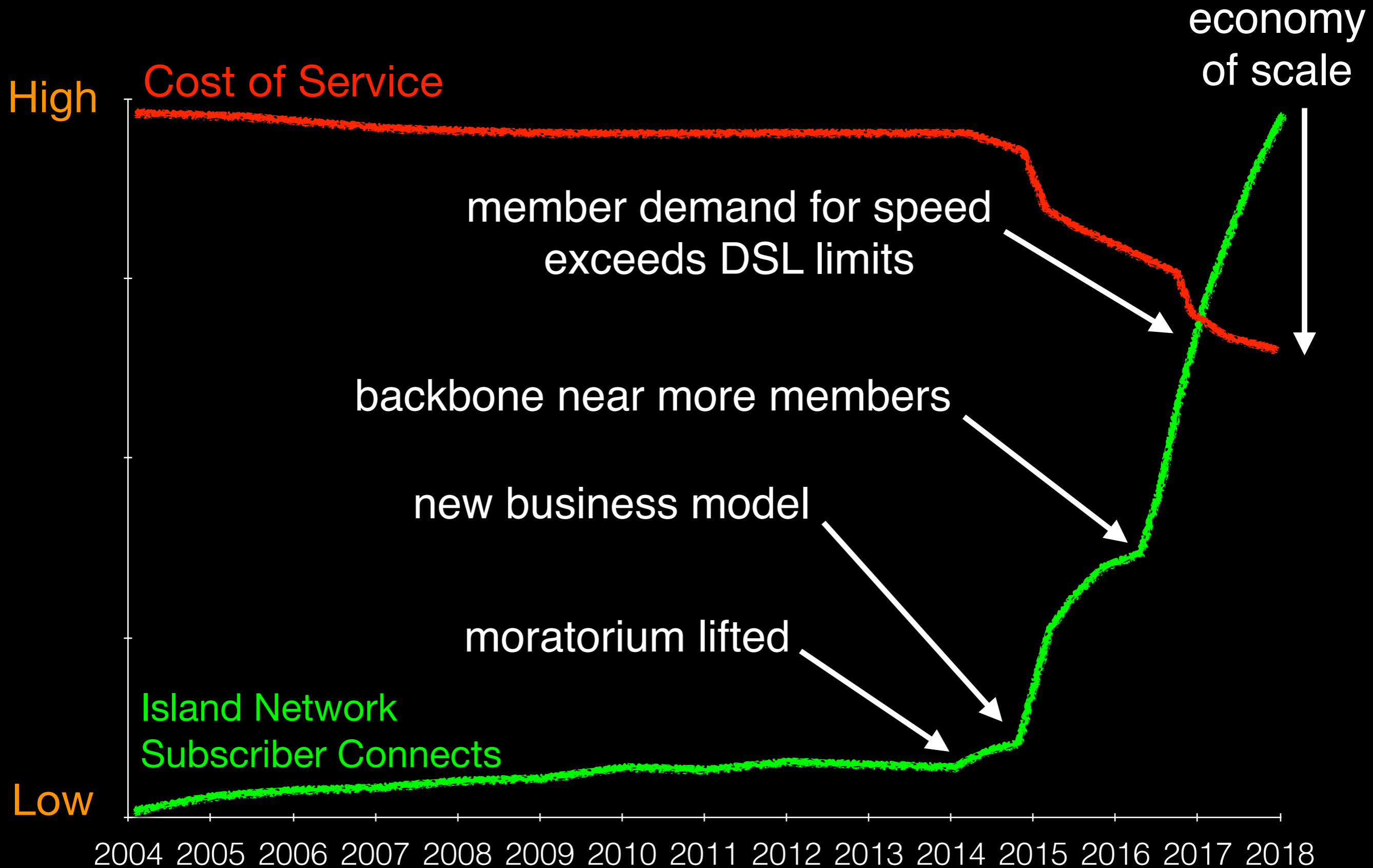
2014				2015
Q1	Q2	Q3	Q4	Q1

Continuing OPALCO Grid Communication Backbone Expansion

• Ongoing design   • Permitting   • Contracting   • Construction

Expansion Timetable

2014				2015
Q1	Q2	Q3	Q4	Q1

Continuing OPALCO Grid Communication Backbone Expansion

- Ongoing design   • Permitting   • Contracting   • Construction

Continue connecting members
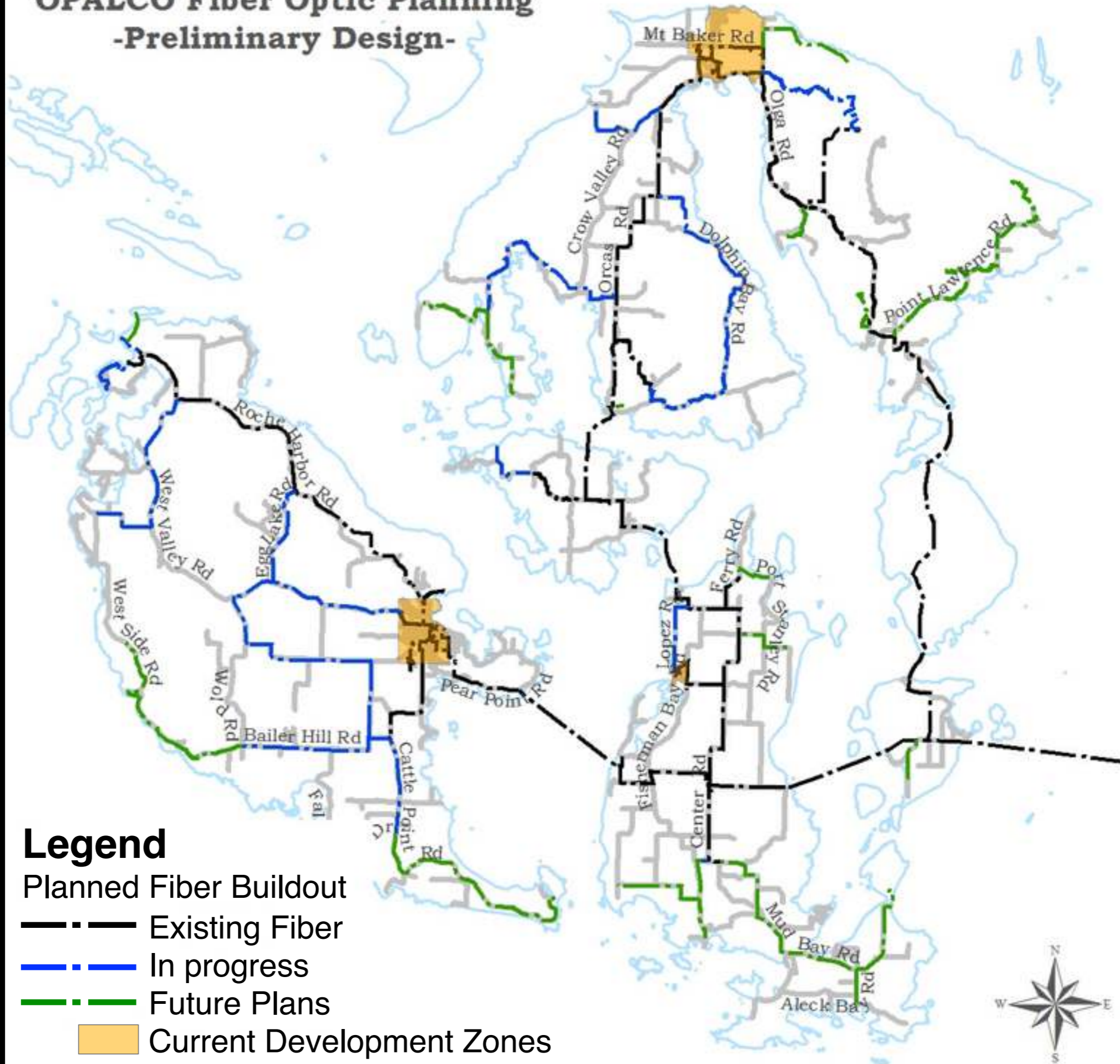Business Plan: Scope, Cost Analysis, Budget, Schedule

Transition to New Business Plan

Internet Service Evolution

economy of scale

High

Cost of Service

member demand for speed exceeds DSL limits

backbone near more members

new business model

moratorium lifted

Island Network Subscriber Connects

Low

2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

OPALCO Fiber Optic Planning
-Preliminary Design-

All Islands

Legend
Planned Fiber Buildout

—·—— Existing Fiber

—·—— In progress

—·—— Future Plans

▮ Current Development Zones

Broadband: Vision

- San Juan County needs a reliable, comprehensive communication infrastructure.

- No one else is stepping up to the plate.

- OPALCO has a fiber optic backbone installed to manage the electric grid.

- We can address this infrastructure need by applying our backbone to serve our community.

Philosophy

Where member owned infrastructure can serve members, it should.

Broadband: Cost versus Value

- The incremental cost of building backbone in a robust way is small

- In contrast, the cost to our community of catastrophic communication failures is huge

"While focusing on member needs, cooperatives work for the sustainable development of their communities."

Broadband: Self-Funding Incrementally

- Members who want to connect to Island Network will pay all costs associated with connecting

- Then, all costs of providing service are paid monthly by the connecting member
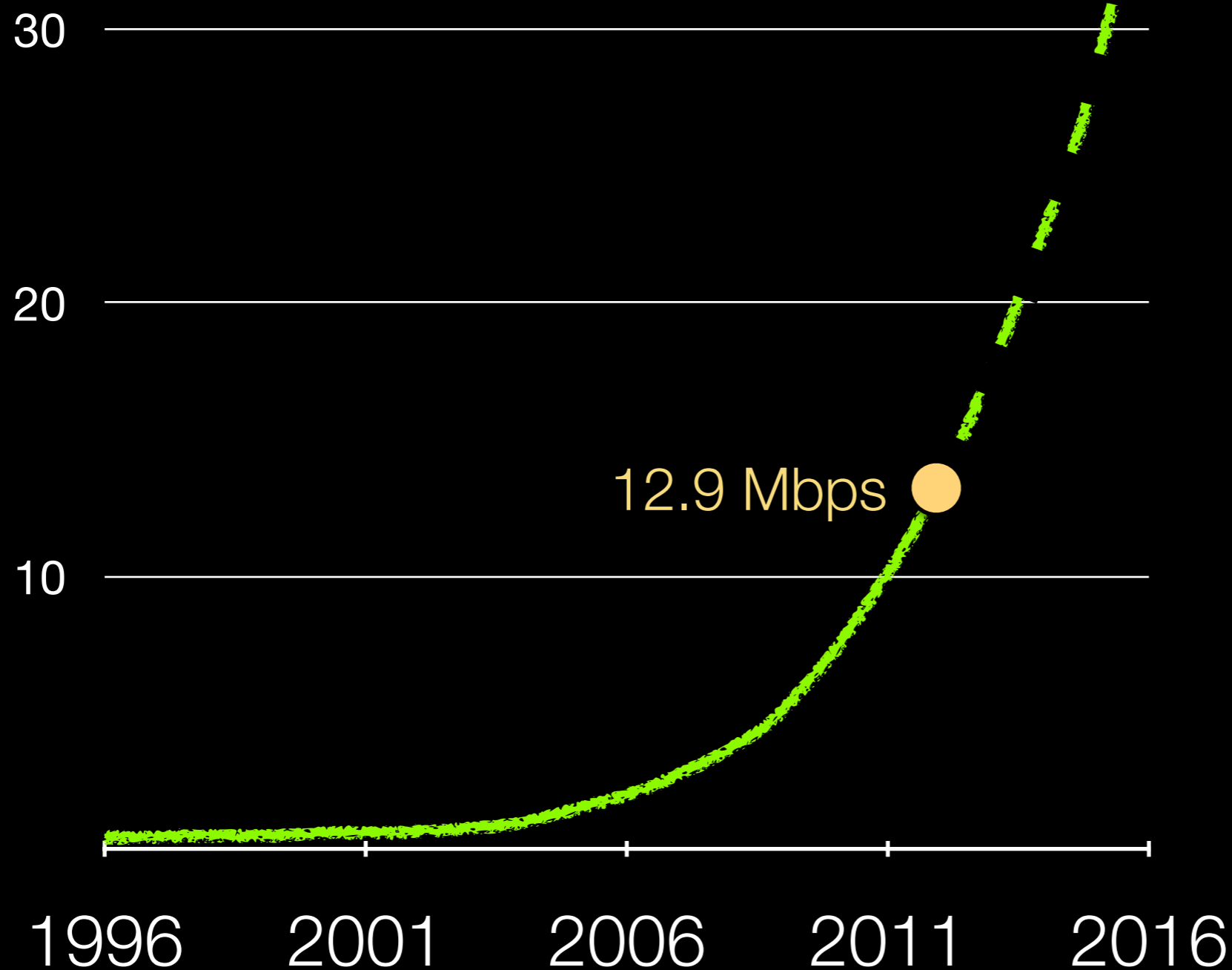
Broadband: Tomorrow

- Detailed engineering design for backbone expansion underway

- Start new connections to existing backbone: March 2014
  - At pre-existing rates, until Cost of Service study is completed
  - New improved rates and policies by Q3 2014

- Construction begins on expansion projects Q4 2014

- If members broadband needs are not being met, call OPALCO
  - Connect to backbone will be for cost of service
  - As backbone expands, cost of service should decrease

- Eventually, we see fiber going to every home and business

Broadband: Interim Service Offerings

- We will provide online sign-up for members to request service.

- If the member is close to a current access point, we will respond with a Connection Cost estimate, and will schedule construction as soon as that is paid.

- For other members, we will maintain a waiting list, and we'll notify the member when the construction begins on the backbone expansion in their area.

- Member requests will be a major consideration for which locations are built out first.

- We will provide information on how to form a "Neighborhood Connection." A Neighborhood Connection, is when multiple members share the Connection Cost of delivering the Last Mile to their neighborhood.

- We are working with Islander's Bank to develop a financing program to help members pay for the one-time Connection Cost.

Broadband: Planned Connection Sequence

1. In the population centers where the connections are closest and the most people benefit.

2. Near access points on existing fiber lines elsewhere in the county

3. Neighborhood Connections

This process will accelerate as the backbone expansion projects are completed, and thus more access points become available

To track the latest developments, subscribe to OPALCO's monthly email newsletter

Broadband and Competition

- Both OPALCO and CenturyLink have made substantial investments in countywide backbone, and offer resale and end-user services to the community.

- Only OPALCO is willing to make the deep sustained investments needed to carry us into the future.

- OPALCO Broadband solutions will drive innovation and competitive environment to improve solutions and pricing

- OPALCO members benefit

Broadband: OPALCO and CenturyLink

- CenturyLink networks are overloaded.

- OPALCO offered to resell portions of its backbone network to CenturyLink to help relieve poor service CenturyLink customers have been experiencing

- OPALCO and CenturyLink have yet to come to terms that are mutually acceptable and appropriately value member-owned OPALCO backbone.

*We will continue to negotiate with CenturyLink,
if it is in the interest of our members*